BUREAU OF ENVIRONMENT
CONFERENCE REPORT

SUBJECT: NHDOT Monthly Natural Resource Agency Coordination Meeting
DATE OF CONFERENCE: March 15th, 2017
LOCATION OF CONFERENCE: John O. Morton Building
ATTENDED BY:

NHDOT
Matt Urban
Sarah Large
Ron Crickard
Mark Hemmerlein
Kerry Ryan
Marc Laurin
Rebecca Martin
Jon Evans
Bill Rollins
Steve Johnson
Ralph Sanders
Chris Carucci
Tim Mallette
Joseph Adams
Michael Licciardi
Rita Hunt
Brian Lombard

ACOE
Mike Hicks

NHDES
Gino Infascelli
Lori Sommer

NHF&G
John Magee

NH Natural Heritage Bureau
Amy Lamb
Bob Spoerl

Consultants/Public Participants
Peter Walker
Frank Koczalka
Marty Kennedy
Jennifer Riordan
Nicholas Sceggell
Robert Durfee
Jim Bouchard
Dawn Tuomala
Richard Yarnold
Christian Rainey
Jack Wozmak

(When viewing these minutes online, click on an attendee to send an e-mail)

PRESENTATIONS/ PROJECTS REVIEWED THIS MONTH:
(minutes on subsequent pages)

(When viewing these minutes online, click on a project to zoom to the minutes for that project)

NOTES ON CONFERENCE:

Finalization of January 18th and February 15th Meeting Minutes
Matt Urban asked the group if they had any additional comments on both sets of minutes and reported that we had received only a few edits. Gino Infascelli provided a few additional edits. Sarah Large incorporated the provided edits and finalized the minutes and posted them on the Bureau of Environment's website.

Ossipee, #1832H-3
Bill Rollins, District 3 Engineer, gave an overview of the project site and proposed work. He is proposing to repair and stabilize a stone retaining wall along the Beech River adjacent to NH Route 16B. The work involves the installation of a new catch basin in the roadway, stabilizing the eroded slope, excavate behind the retaining wall to place filter fabric and fill to stabilize the wall, and place large diameter stone along the base of the wall to further stabilize the wall. B. Rollins described the direction of storm water runoff down Route 16B and how it rushes over the grass embankment that then flows over the stone retaining wall into the Beech River causing erosion on top of the embankment and scour within the channel along the stone wall. The current placement of the catch basin does not collect much of the runoff.

Mike Hicks asked if the work was within Army Corp jurisdiction/ within the ordinary high water (OHW) of the river? Because if the plan was to place riprap below the OHW then the project would need an ACOE permit (SPGP). M. Hicks also mentioned that the Beech River is an Essential Fish Habitat stream and that if the project's impacts are within ACOE jurisdiction that they would need to coordinate through him on bats. M. Hicks also mentioned that the project will need to deal with Section 106.

Gino Infascelli asked who owns the dam downstream of the erosion. He was thinking that the owner of the dam would have lots of elevation data on the river. B. Rollins advised that the owner of the Beech River Mill along the other embankment also owns the dam. Bob Spoerl asked if the owner was still using the dam. B. Rollins responded that he thought that they didn't. B. Spoerl asked if the dam was still used to generate power, and B. Rollins said that he didn't believe so but that the dam is still functioning*.

Matt Urban stated that we anticipated doing a Shoreland PBN since the work is within a protected shoreland zone. G. Infascelli added that since the drainage pipe will be directly discharging into the stream, you will need to explain that the direct flow/input would be "better" than the sheet flow and continued erosion over the embankment. In response to this B. Rollins said they could propose that the new basin have a sump. G. Infascelli responded that a drop inlet structure would be better due to fish and game concerns with turtles and snake and other critters that might fall in and their ability to get out. B. Rollins added that if there were any concerns with turtles and snakes then yes he would use a drop inlet. He added that he and Meli Dube (the Environmental Manager from BOE) would follow up on this.
Amy Lamb mentioned that there are no Fish and Game hits and that nothing was flagged in the NHB review.

M. Urban and Lori Sommer concurred that no mitigation is required as the work is protection of existing infrastructure.

B. Rollins added that he plans to do the work in the summer when the river is at low flow.

**Meli Dube, NHDOT Environmental Manager for the project, confirmed that the Beech River Mill, which produces custom shutters using antique equipment, is still using the dam as part of their hydroelectric energy production in order to maintain as much of the integrity of the historical mill function as possible. The owner is in support of this project as he has invested in stabilizing the opposite bank and dam, as well*

as improving the land around the bank on the project side of the river by installing a war memorial. He wants to stabilize this eroded area to prevent further damage to infrastructure on his property which surrounds the project area.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting.

Northfield, #1832H-5

Bill Rollins introduced the project. This is the first time this project has been presented at the Natural Resource Agency meeting. The project is located on NH Route 132 approximately 1500' south of Sandogarty Pond Road. The purpose of the project is to replace deteriorated twin 36" culverts with a 4'x8' box culvert (embedded one foot). There is evidence of settling on NH 132 which is also an issue. The age of the culvert is unknown but estimated to be 1950's.

A review of project photos included a driveway crossing with a second set of twin 36" culverts downstream, approximately 100' south of the proposed work area. B. Rollins stated potential downstream flooding is not an issue as the box culvert replacement has a comparable water carrying capacity, based on hydraulic calculations.

Michael Hicks asked if tree cutting of any trees greater than 3 DBH will be included. B. Rollins said no. M. Hicks stated this is Essential Fish Habitat and needs to be coordinated with NOAA. Kerry Ryan stated that coordination with NOAA was complete and no issues were noted. M. Hick stated the project also needs to be reviewed for cultural concerns and Northern Long Eared Bat. K. Ryan indicated the project was reviewed for cultural concerns and by 4(d) rule for NLEB and no issues were noted.

Matt Urban asked if the box culvert will be extended. B. Rollins stated that the current length is 35' and the proposed culvert may increase to 40' and guardrail may also be added. M. Urban asked if an extension would trigger the need to pay for bank and stream impacts. Lori Sommer stated it would need mitigation. B. Rollins stated the construction sequence would be to do half the road at a time because they do not want to shut the road completely because there is no good detour.

Gino Infascelli stated the application/map should also show the second crossing relative to the project area and this can be used as justification in the alternative design form. B. Rollins stated there was quite a bit of storage on the inlet side.

M. Urban asked if it was a Tier 3. K. Ryan stated it was.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting

Tamworth, #40524

Project Description

The purpose of the project is to repair the abutments, wingwalls, and cut off walls and replace the superstructure of the bridge (Tamworth 095/162). The bridge is currently red-listed.

Steve Johnson presented an overview of the site which is located near the intersection of NH16 and NH113 in Chocorua. The existing structure appears to have a concrete invert which is perched; however, there is a dam located approximately 300 feet upstream that prevents fish passage. Photos of the downstream

elevation, upstream elevation, and through the structure were presented along with a sketch of proposed temporary and permanent impacts.

The work will consist of adding a concrete toewall at the east abutment to prevent erosion of the correct and prevent erosion of mortar between the masonry, pointing and repairs to the rubble masonry abutments and wingwalls, replacement of the superstructure, correcting undermining of the invert and the SW corner of the abutment and placing riprap on the downstream side to prevent further undermining.
Mike Hicks asked if trees would be cut. Steve Johnson answered no.

Lori Sommer asked whether the riprap would improve fish passage. Steve Johnson indicated that three additional weirs would be needed to fish passage which would have additional impacts and this was not proposed since there is a dam upstream. Lori asked how deep the pool was at the outlet. She indicated a deeper pool could allow fish to jump up the outlet. She was concerned that filling the pool could further restrict passage. She asked that DOT coordinate with Fish and Game on the proposed work. DOT will discuss with Fish and Game.

Matt asked whether mitigation would be required since this is protection of an existing structure. Lori Sommer indicated mitigation would not be required.

This project has been previously discussed at the 12/19/2012, 6/19/2013, and 8/17/2016 Monthly Natural Resource Agency Coordination Meeting.

********** Manchester, #16099 Minutes Added on 03/21/2018 **********

Manchester, #16099
Peter Walker (VHB) presented on Manchester 16099, a NEPA study of Interstate 293 Exits 6 and 7 in Manchester.

Background
The purpose of the project is to address capacity, safety, and access related deficiencies along a 3.5-mile portion of I-293 beginning north of Exit 5 and ending north of Exit 7 by: correcting geometric and safety deficiencies while reducing congestion at problem locations; accommodating future traffic growth related to commuter trips and the transportation of commercial goods and services through the corridor; and improving access to the highway consistent with the long-term vision of the communities of Manchester and Goffstown.

The study area includes portions of the Manchester Historic Mill District, the Manchester Community College, and the Manchester Landfill, and extends west to include portions of Dunbarton Road, Goffstown Road and Straw Road. Within this study area, natural resource field work is substantially complete. Wetlands have been field delineated, rare plant surveys have been conducted, and a wildlife habitat evaluation has been completed. The project was previously analyzed in a Feasibility Study published in December 2013, and is now moving through the NEPA process, classified as an Environmental Assessment (EA). The Purpose and Need statement has been completed. A traffic analysis and development of alternatives is in progress. A Proposed Action is expected in Spring 2017, an EA will be written during the summer and fall, and a Public Hearing is expected in Fall 2017.

Key Wetland Impacts
Project design progressed during the fall and winter of 2016, but the design is still very conceptual. A Proposed Action has not yet been fully identified. But, based on the current concepts, key impact areas were presented for discussion.

I-293 Mainline, South of Exit 6
The traffic analysis is clear that the interstate needs to be widened from two to three lanes in each direction in this segment. However, the right-of-way is limited by the presence of the historic millyard on the west and the Merrimack River on the east. Engineers have worked to refine the design to minimize impacts, but the solution will involve some level of impact to the river due to the proximity of an adjacent historic building. In addition to wetlands regulatory protections, the Department needs to consider Section 106 and Section 4(f), which provide significant protection to the millyard.

The design in this segment is based on a six-lane cross-section with a design speed of 55 mph. The likely Proposed Action would widen the highway to the east, towards the Merrimack River (known as Alternative 3C). The conceptual design includes a section of roadway that would be cantilevered over the banks of the river to minimize impacts. Even with several measures intended to minimize impacts, a total of about 980 linear feet of river bank would be directly impacted, totaling about 13,000 sq ft. This impact would result from construction of a new retaining wall section with rip-rap. Additionally, an existing retaining wall south of Bridge Street would need to be re-built, regardless of the alternative selected. The current design holds the existing wall footprint, but approximately 1,000 linear feet of wall (i.e., top of bank) would be reconstructed.

The engineering team has also developed a "Widen West" alternative in which the alignment holds the existing east edge of pavement such that there would be no direct impact on the Merrimack River. This alternative would require the full acquisition of the historic American Cotton Duck Factory building, which is part of the National Register-listed Amoskeag Millyard. This alternative does not seem feasible given the level of historic, private property, and business impacts.
Exit 6

Currently, two alternatives are under consideration: an Offset Diamond Interchange and a Modified Single Point Urban Interchange. Both alternatives would have a substantial impact on Wetland BB-01. Although the wetland has been impacted by adjacent land uses, it still provides some functions, especially related to floodflow alteration and water quality functions. Total impacts to this wetland would be approximately 1.5 acres, which would be the single largest impact resulting from the project.

Exit 7
Reconstruction of Exit 7 in its current location has been dismissed as an alternative for several reasons relating to capacity, safety and environmental impacts (e.g., reconstruction would impact more than 1.5 acres of the "Radio Tower Wetland.") Therefore, the Proposed Action will include relocating the Exit 7 interchange to the north. Peter briefly reviewed the revised conceptual design for the new interchange. It has not yet been decided whether the new interchange will include a connection to Goffstown Road/Straw Road (i.e., the "Goffstown Connector"). Conversation with the Town of Goffstown and City of Manchester on this connector are on-going. At the new Exit 7, two key wetland impact areas are notable: First, a vernal pool complex was identified north of the Manchester Landfill. While early concepts would have directly impacted several pools, the highway design has been updated to avoid most of these impacts. There would still be some level of direct impact to one pool. Additionally, if the Goffstown Connector is included in the Proposed Action, a new bridge spanning Black Brook would be constructed. This new crossing would comply with NHDES stream crossing rules. Even with the Goffstown Connector, the current design would impact about 0.5 acres for the relocated interchange .

Mitigation
During previous meetings, the resource agencies suggested that the project team coordinate with the Piscataquog Land Conservancy (PLC). Peter met with the PLC in October 2016 to open a discussion. The PLC reports that their work in the Black Brook watershed has focused largely on its headwaters in

Dunbarton and Goffstown. There may be some opportunity to work with PLC to identify a land preservation project in the northwest portion of Goffstown, but the PLC indicated that they have no active appropriate opportunities in Manchester. Peter requested further guidance from the agencies relative to the mitigation strategy. Specifically, if the main impact is to the Merrimack River, and especially if the new crossing of Black Brook is dropped from the Proposed Action, should the mitigation strategy still focus on Black Brook?

Discussion

Mike Hicks asked about the total project impacts. Peter replied that the impact assessment is on-going, but, depending on the selected alternative, could be as much as 4.3 acres. The Goffstown Connector is a relatively small portion of the total direct impact area – on the order of 0.1 acre.

Lori Sommer expressed concerns about the potential impact to the Manchester Cedar Swamp that could result from the project and from new land development related to the new roadway segment. Peter explained that the project team has coordinated with the City of Manchester, which developed a master plan for the Hackett Hill area, and which does intend to encourage development in the area. However, the master plan identified conservation areas, which have been included in the Nature Conservancy's Manchester Cedar Swamp Preserve. Lori requested that the Environmental Assessment clearly address the issue, and suggested that the mitigation strategy could focus on additional protections for the Cedar Swamp including adding buffers. She suggested that the team look into recent projects related to the Manchester Housing Authority.

Amy Lamb asked about plant surveys. Peter replied that surveys were substantially completed in 2016, although some additional site visits may occur in 2017. He confirmed that only one tracked species was found – licorice goldenrod was found within a powerline easement near Dunbarton Road, as well as at a transplantation site near the City transfer station. A search for small whorled pogonia did not located any populations. Amy requested that plant survey data be submitted to NHB.

Mike Hicks requested that Mark Kern be kept in the loop on mitigation; Mark was unable to make the meeting, but will have important feedback. Mike agreed that issues related to impacts in the Hackett Hill are would be the most difficult project issue.

Marty Kennedy provided some additional background on the Goffstown Connector. Initially, the Town of Goffstown had advocated for including this connection because heavy trucks were limited on Goffstown Road. This truck ban has since been lifted.

Lori Sommer suggested that if the mitigation package includes Black Brook or impacts in Goffstown, then the project should coordinate with David Nieman of the Goffstown Conservation Commission.

Lori asked for clarification of the impacts to the Merrimack River. In reviewing the alternative, Peter stressed that design was very conceptual. The water level represented in the slides presented today represents the 100-year floodplain elevation, not the normal water elevation. Peter asked the attendees for feedback regarding the level of impacts – 1,000 linear ft for reconstruction of a retaining wall south of Bridge Street, plus approximately 980 linear feet of new impact. It appears that this level of impact in unavoidable. Mike Hick suggested that NHDOT could informally submit plans of the proposed impacts and alternatives to determine permitting feasibility.

Lori asked about floodplain impacts. Peter said that no volumetric or hydraulic analysis had yet been completed, but that the total floodplain impacts are currently estimated to be approximately 1.8 acres. Good

areas for compensatory storage are limited, but areas across the river may be appropriate. Any search for compensatory storage would focus on already disturbed areas. In response to a question from Matt Urban, Peter clarified that rip-rap would be keyed into the river bed in some areas, i.e., below ordinary high water. Lori Sommer asked about whether there would be new stormwater discharges to the river. Peter replied that drainage design has not yet begun.

Mike Hicks suggested that floodplain mitigation could be provided anywhere in the same hydraulic reach. Lori mentioned that addressing aquatic organism passage (stream discontinuity) may be an appropriate mitigation strategy. Mark Hemmerlein has a database of culverts that could be reviewed for potential mitigation opportunities.

This project has not been previously discussed at the 9/21/16 Monthly Natural Resource Agency Coordination Meeting

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Hampton, #40927

Matt Urban gave an overview of the updated impacts, prime wetland delineation, invasives, and past thoughts about mitigation for the project. Matt advised that it was the Department's understanding from the field visit to the site with Mike Hicks and other Army Corp of Engineers representatives that any work in the marsh was not favorable because it would require an individual ACOE permit. M. Urban recalled that the group had discussions about if the Department could keep all of the work within the existing footprint of the pipe then the Department would not have to do an Individual ACOE permit, but it was determined that the Department needs to impact out into the marsh for the stone apron to allow for better and easier maintenance of the pipe and outlet. It was also thought that being in the marsh to remove the phragmites would cause more marsh impacts and was believed to be an unfavorable way of on-site mitigation.

M. Urban stated that due to the prime wetland impacts on-site mitigation was needed. With prior information the Department had proposed paying for mitigation through the Arm fund in-lieu fee; however, through subsequent conversations with DES and Army Corp the Department would like clarity how to proceed.

Mike Hicks asked if the phragmites would just be cut? The group (DES and DOT) responded no, that the intention would be to remove the roots as well. In order for the removal of the invasive to count towards on-site mitigation it would need to be a restoration effort, meaning the plant would need to be fully removed. M. Hicks thought that the phragmites removal sounds like restoration (making a clear notation of restoration and not just mitigation). He added that the PGP allows for the repair of existing structures, with minor deviations. With this information he believes that the project falls under these two categories and will not require an Individual Permit. Lori Sommer added that a good restoration plan is needed and that it should be reviewed by DES and ACOE. Funding to support the follow-up monitoring and removal should be included in the plan.

M. Urban asked the group what amount and quantity of phragmites removal would be appropriate? Gino Infascelli asked where the pipe that is already permitted is located? Ralph Sanders showed on the plans.
M. Urban asked/clarified the location and amount of removal for on-site mitigation; he proposed that the Department would remove the phragmites near the two 15" culverts, starting at the pipe that District has a permit for already and moving down the phragmites system in front of the other two pipes District wants to permit. The group agreed.

M. Hicks asked when the work would occur? R. Sanders answered Fall 2017 and the work on the pipe that he already had the permit for would be done in mid-April. M. Hicks brought this up because a new PGP will be coming out in August of 2017.

Jenn Riordan of Smart Associates added that they had updated the HOTL line to match the DW line for the time being and wished to discuss the HOTL line further in the meeting. She added that the plans are still in DRAFT form and additional edits are expected to be made in order to address other comments the Department has received from DES. G. Infascelli asked what the HOTL was based on. J. Riordan answered that they didn't have survey in the area and it was based on observable wrack lines during a field visit Smart Associates had done. J. Riordan believed the review was done in June. G. Infascelli advised that they should look at NOAA's tides chart and go out when tides are relatively high, and to look in an undisturbed area and carry the elevation across the rest of the project area.

M. Urban reiterated that the project would now go SPGP. M. Hicks agreed.

M. Urban asked if we should show the phragmites removal as permanent impacts for restoration. The group agreed. M. Hicks added to make sure to label as "for restoration."

R. Sanders asked what the process for phragmites removal is; can the Department put it out to a contractor? M. Urban advised that the Department can internally develop a plan and will look into removal methods. J. Riordan brought up that they got hits for the Northern long-eared bat and red knot (federally-listed species) through her IPaC report. M. Hicks advised that there would be no effect for either; no trees are suitable for NLEB and the habitat area is not suitable for red knot. M. Hicks added that the Department would need to address Essential Fish Habitat concerns in the application.

R. Sanders asked G. Infascelli if he could change the diameter of the proposed pipe replacement for the pipe District already has a permit for because of issues with road cover. G. Infascelli said it was fine as long as the pipe is smaller. R. Sanders plans to send a follow-up email to Gino so he has it on record with the permit's file. (See Wetland Permit 2011-01542)

This project has not been previously discussed at the 9/21/16 Monthly Natural Resource Agency Coordination Meeting

Tamworth, #16239 (X-A001(205))

This project involves the replacement of an existing bridge that carries Route 113 over Bearcamp River (Bridge No. 150/106). DuBois & King Project Representative, Nick Sceggell, presented the project details including impacts to wetlands.

The bridge is currently on the NH DOT Red List and the width is 34.5' out to out. The existing length consists of three spans at 24.5', 71.5', and 24.5'. The Bearcamp River at this crossing location is classified as a Tier 3 stream. The proposed crossing will meet the requirements of the stream crossing rules.

A review of photos of the existing bridge and abutment areas showed the existing slopes at the abutments consist of large chinked in stones or rip rap protection. The proposed project includes removal of the existing piers and abutments to below existing grade, installation of new abutments behind the existing abutments, and installation of a new superstructure consisting of butted box

beams with concrete deck overlay. The new bridge will consist of a single span of 133' between centerline of bearings. The bridge will be closed during construction, and traffic will be detoured.

NH Division of Historical Resources has reviewed the project. There are no concerns for cultural resource impacts at the project location. FHWA has determined and NH DHR has concurred that the project as proposed will not affect historic or archaeological properties.

A review of the project area by the NH Natural Heritage Bureau, NHB17-0748, was completed with a result of no known occurrences of rare species or habitat at the project area. Federally listed species indicated in a review of the USFWS Information for Planning and Conservation (IPaC) tool include the Northern Long Eared Bat and the Small Whorled Pogonia. Tamworth does not have any known NLEB hibernacula or maternity roost trees. A survey of the bridge is scheduled in early April to determine if the bridge may be used by bats. If the project includes summer tree clearing, the project will be reviewed in accordance with the FHWA, FTA, FRA Range-wide Programmatic Consultation for NLEB as a "may affect, likely to adversely affect". A visual survey of the project area indicated no Small Whorled Pogonia in the project limits.

The Bearcamp River is identified as Essential Fish Habitat for the Atlantic Salmon. A review by NOAA resulted in a finding of minimal adverse effect, and no recommendations for mitigation. The project is within the 100 year flood plain. The existing bridge and the proposed replacement bridge are both able to pass the 100 year flood event.

A shoreland PBN will be required for work in areas within 250 feet of the Bearcamp River that is outside of the jurisdiction wetlands.

A review of wetland impacts was presented. Temporary impacts include areas around the existing piers to be removed, areas that are existing stone or armored, which will be disturbed and replaced with rip rap, and an area of the bank slope and channel, which will need to be accessed by a crane during construction to install the bridge beams. The temporary access will include tree clearing. Lori Sommer asked if a planting plan will be provided. Nick Sceggell responded that one can be included in the drawings. The temporary access in the channel will consist of a stone causeway to be built in the channel to provide access for the crane during construction. The top of stone would be above the ordinary high water to keep equipment in the dry. Water level and flows would be monitored and equipment removed from the channel if necessary during high flows and water levels. L. Sommer asked how long the crane would be needed. It is estimated to be needed for 3 weeks. Permanent impacts include areas that will be armored with stone beyond the areas that are already existing stone slopes. Gino Infascelli indicated that these areas may already be armored and if so, those impacts would be considered temporary. If the areas are not already stone, then the additional stone impacts are permanent and would require mitigation. G. Infascelli asked if there were any benches that would be incorporated into the new crossing. A 9' bench and an 8.5' bench are included in the design.

This project was previously discussed at a Monthly Natural Resource Agency Coordination Meeting on 8/21/13.

Harts Location- Carroll, #26162 (X-A003(275))
Chris Carucci provided an overview of the project. This is a culvert repair project funded under the Federal Culvert Repair Program. The culvert is a Tier 3 Stream Crossing, classified as a Bridge, and carries the headwaters of the Saco River under US Route 302. The culvert a multi-section culvert and the inlet is in the Town of Carroll, partly within the White Mountain National Forest and partly within the Conway Scenic Railroad right-of-way. The lower portion of the culvert is within the Town of Harts Location, partly with the highway right-of-way, railroad right-of-way, and Crawford Notch State Park. The Town Line is also the Carroll County/Coos County line.

The culvert is a corrugated metal plate arch originally constructed in 1958 and modified in 1961. The culvert length is approximately 950', with the alignment primarily under US Route 302 adjacent to the Conway Scenic Railroad. The culvert has less than 3' of cover for most of its length. The inlet is a complex concrete structure including retaining walls, a 5' x 16' opening and a transition section. C. Carucci commented that the people who constructed the inlet in 1961 did a nice job with the design and construction of this custom inlet. There is a concrete pad at the inlet. Above the inlet, there is a large marsh/wetland that is approximately 15 acres in size. The upper pipe segment is 137" wide x 87" high, 325' long, at 0.4% slope. The middle pipe segment is 103" wide x 71" high, 322' long at 3.9% slope. A smooth tapered concrete transition connects these segments. The lower pipe segment is 103" wide x 71" high, 276' long at 10% slope. A concrete energy dissipator is connected to the pipe outlet, which then flows to a very steep channel composed of ledge outcrops and boulders. At the outlet of the pipe, water drops around 8 feet to the floor of the energy dissipator. There is a timber top covering the dissipator. Photos of the inlet, outlet, and Route 302 were shown to the group.

Bridge inspectors detected corrosion in the top of the pipe in 2012. The Bureau of Bridge Maintenance patched two locations in the summer of 2012, and recommended that a permanent repair project be initiated. C. Carucci explained that the drainage area is about 867 acres and the existing culvert has sufficient capacity to pass a 100 year storm.

Numerous options have been considered, including replacement with a structure recommended by the NH Stream Crossing Guidelines, replacement in kind, several sprayed-on lining materials, a corrugated metal liner, or a hybrid of the sprayed on lining and metal liner. Replacement in kind and replacement with a structure that is compliant with the stream crossing rules would require closing the road for several months. DRED has provided economic impact estimates in the millions of dollars in lost revenue from such a closure. Railroad operations would also be impacted, with costs of $100,000 or more, depending on the duration.

The preferred option is a hybrid rehabilitation treatment. The lower two sections will be lined with a corrugated metal plate liner, one size smaller than the existing size. The liner is constructed by assembling individual plates inside the existing culvert. Once complete, the space between the current pipe and the new pipe is filled with grout. Based on hydraulic analysis, the reduction in diameter will not affect capacity, and will maintain the existing outlet velocity.

The upper segment controls capacity, so the proposed rehabilitation method for this segment is a relatively thin sprayed on mortar liner. This treatment involves spraying several coatings of mortar from inside the pipe, with a reinforcing mesh between layers. Mike Hicks inquired if the existing

pipe would continue to rust and if the design would depend on strength from the existing rusting pipe. C. Carucci explained that the sprayed on thickness is designed to be a fully structural repair, assuming no support from the existing pipe. A design thickness from one manufacturer of 1.6" was suggested to be sufficient. The minimum thickness will be 2". This this will result in a slight reduction in diameter but a smoother interior surface. Analysis indicates a maximum 6" increase in headwater, depending on the smoothness of the final surface. Matt Urban asked if this would be the first time utilizing this treatment in NH. C. Carucci explained that it would, the mortar is a geopolymer with aluminum and silica as its base. The treatment has been well reviewed in other states. He explained that it dries faster than Portland cement and adheres to itself. Bob Spoerl asked if the pipe fills during flooding events, C. Carucci explained that it does not. B. Spoerl also commented on potential options for linear grooves within the pipe to control the direction of water through the pipe. C. Carucci explained that the spray-on methodology does not seem to allow for this type of handling.

The construction methodology proposed is to install a temporary cofferdam at the inlet on top of the existing concrete pad. There is significant storage in the wetland on the opposite side of the railroad bridge and in the existing channel. This might be sufficient storage during dry conditions. The plan is to provide a pump to bypass the flow, if necessary. The discharge from the pump could be directed through the existing culvert or overland. In either case, the discharge would be into the energy dissipator.

C. Carucci commented that the group was hoping for guidance about which areas are jurisdictional and required permitting. Rebecca Martin commented that they do propose to remove some sediment form the structure. All debris from pipe cleaning will be captured inside the energy dissipator. Equipment will not be allowed off the road, except for lifting equipment at the inlet and outlet. At the inlet, the project proposes to replace broken concrete pieces that were cast in place. At the outlet the timbers over the energy dissipater will be replaced and the stone wall will be repaired. The proposed staging area is the existing gravel parking area just north of the inlet. R. Martin commented that the Saco River is designated as 'Natural' through this structure.

Gino Infascelli commented that there cannot be any permanent impacts in a river designated as Natural . It appears as though all of the impacts are temporary. The proposed culvert rehabilitation would be an alternative design.

C. Carucci estimated that the temporary impact area at inlet for a sandbag water diversion (placed on concrete pad) would be around 600 square feet. Mike Hicks indicated that the coffer dam on the concrete pad would be classified as fill, and would require permitting. An alternative design form will be required and it should document the change in capacity of the structure. Matt Urban commented that a permit will be required for the stream that flows through the pipe as this rehabilitation will have temporary impacts.

M. Hicks inquired about the type of review for Northern Long-Eared Bat. R. Martin explained that the USFWS Regional Field Office has indicated that an inspection of the inlet and outlet for indications of bat utilization would be sufficient (not the entire structure) for the project to be reviewed within the FHWA Programmatic Consultation. M. Hicks said this is fine.

This project has been previously discussed at the 7/16/2014 Monthly Natural Resource Agency Coordination Meeting.

Merrimack, #40300 (X-A0004(357))
J. Bouchard, Quantum Construction Consultants, LLC (QCC) provided an overview of the project noting that this is a NHDOT TAP project based on the Town of Merrimack's (Town) need and desire for a multi-use path that provides connectivity of existing residential area trails to Watson Park, a Town park, local businesses in the central business district, schools and Town offices.

Existing trails located to the west of the F.E. Everett Turnpike (FEET) would be connected to the new multi-use path at the existing pedestrian bridge located below the FEET. The existing trail system along the Souhegan River bank is about 5 feet wide and not ADA accessible. The new path would maintain the existing horizontal alignment, be widened to 8- foot width, and be surfaced with stone dust. Presently, there are small wooden pedestrian bridge crossings over drainage courses along the path that are not ADA compliant. These crossings would be revised for ADA compliance and cross culverts installed at the drainage crossings.

Further down the existing Souhegan River trail, there are other small paths that lead to the adjacent schools, to riverbank paths for river viewing, and to benches overlooking the river. These are used by many people including fisherman and the boyscouts. These paths would not be rebuilt as part of the project but accesses to them would be improved to match the proposed multi-use path. A sign at the end of the existing trail, at a former dam impoundment area, states that the trail will be continued from this point in the future. Multiple alternatives are being considered for crossing the former impoundment and drainage course within the impoundment area, utilizing comments received from two local concerns meetings. The former impoundment area crossing will be made by utilizing a board walk and a culvert. Preliminary StreamStats calculations indicate a 48-inch culvert with mortar rubble headwalls would be sufficient for the drainage crossing.

The preferred alternative from the Town and from public comments are for continuing the multi-use path to Watson Park by accessing the former dam sluiceway and masonry arch under US Rte. 3 then continuing to connect into the existing sidewalks at Watson Park and the sidewalk on the US Route 3 bridge. The path would pass through the existing headgate structure of the former Merrimack Village Dam. Currently, three options on this alternative are being evaluated for the final routing the path on the east of US Rte. 3. Each one of the alternatives will impact the existing concrete walls and beams that support the cantilevered sidewalk for the US Rte. 3 bridge approach to varying degrees.

These options on the preferred alternative range from full removal of the concrete walls and beams in favor of embankment fill and reconstruction of the US Rte. 3 roadway cantilevered sidewalk as an at-grade sidewalk; to preserving the structures and overfilling with embankment fill for reconstruction of the cantilevered US Route 3 sidewalk. QCC noted that an existing deteriorated concrete beam supporting the overhead bridge approach sidewalk would need to restored or replaced.

A detriment to all of these alignment alternatives is the need to cross the contaminated soil stockpile adjacent to Watson Park which is presently capped and subject to NHDES Activity Use

Restriction (AUR). Currently the area is fenced off and would have the fenced area restored after construction. A soil management plan would be needed for excavation and work within this area as well as a health and safety plan would need to be developed by the contractor.

Another path alternative being evaluated that would eliminate interference with the AUR site, is to create a surface route beginning at the fire station. In order to ascend the existing 10 to 12 foot embankment, while still meeting ADA compliance, a switchback ramp system would be constructed. This would move pedestrians through a narrow area by the fire station building and it would eliminate the public parking spaces and it would also have a large impact on the fire station operations. Continuing north along the west side of Route 3, a new sidewalk would need to be constructed that passes right in front of the fire truck access. The new sidewalk would then tie into the existing sidewalk on the west side of US Rte. 3 to a point opposite the Watson Park entrance. Due to the high traffic volumes on US Rte. 3, approximately 16,000 vehicles per day, the road crossing would require new pedestrian HAWK signals. The signals would be in close proximity to multiple sets of signals further northward on US Rte. 3. This alternative has the potential to cause many problems with traffic and fire station operations. The Fire Department is very opposed to this alternative.

J. Bouchard then reiterated that the alternatives for passing underneath US Route 3 would preserve and repurpose the historical dam remnants and arch while providing for the reconstruction of a severely deteriorated sidewalk on US Rte. 3. The intent of the proposed alignment along the Souhegan River would be to minimize tree cutting. However, the construction of the ADA compliant ramp system to negotiate the existing 20 percent grade up to the existing pedestrian bridge would require going off existing alignment and thus greater tree cutting.

J. Bouchard noted that the project will require a NHDES Alteration of Terrain (AoT) permit: a NHDES Trail Notification, as a minimum, for construction; NHDES approval for impacts to the AUR site; and a Memorandum of Agreement (MOA) through NHDOT and NHDHR for affects associated with the historical dam remnants.
ACOE inquired about crossing the wetlands (impoundment) area and if structures would be necessary for doing so. If so, permits would need to be considered. J. Bouchard noted that an at grade path would be constructed with a 48-inch culvert for the drainage crossing.
DRED suggested that an alternative for utilizing a boardwalk across the impoundment area be considered as this would minimize impacts to the wetlands. The boardwalk could be constructed utilizing 2-inch diameter posts driven into the ground and standard dock hardware for attaching the wooden boardwalk to the pipes. DRED's construction experience has included 8 to 10 foot wide boardwalks to allow for passage of trail groomers. QCC added that with the availability of pressure treated glulam beams the spacing between pipes could be maximized. Discussion on use of pressure treated posts for support would increase the wetland impact area. Additionally, when needed new iron posts can be easily driven into the ground and the boardwalk attached to the new support pipes.

ACOE then asked if there would be any impacts to the Souhegan River. J. Bouchard noted there would be none. M. Hicks then mentioned that bats would need to be studied if trees are going to be disturbed.

ACOE then commented that since FHWA is involved FHWA will be the lead on the historical MOA and that the ACOE has no further input.

NHB noted that a number of exemplary species are present within the project area including Birds Foot Violet and while the Souhegan River has no direct impacts, buffer impacts should be minimized. Concern about the tree cutting was also expressed.
J. Bouchard noted that in order to have the ADA compliant ramp to negotiate the 20 percent grades at the existing pedestrian bridge connections tree clearing outside of the existing trail alignment would be required. Slope embankments would be stabilized with turf reinforced matting options versus using stone.
NHB inquired about plantings for the project. J. Bouchard responded that for the Souhegan River path segment, the existing humus would be stripped and stockpiled during construction for replacement on the path embankments. This humus will serve as a starter for replenishment of natural vegetation.
NHDOT concluded the meeting by saying it appears that the Feasibility Study is on the right path.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting

Keene Airport Runway 14 – 32 (SBG 08-15-2016)
Richard Yarnold (Ballantine Aviation Consulting Services, PLLC) introduced the project and the proposed work at Keene Airport, the primary focus of which includes reconstructing the Runway 14/32 surface and four taxiway connections, installing Airfield Lighting systems and addressing stormwater drainage system issues. Most work will occur within the existing footprint of the runway and because it is a cross-wind runway, FAA guidance requires the runway pavement be reduced from the current configuration of 150 feet wide to 75 feet wide. This work qualifies for a NEPA Categorical Exclusion and due to the limited work outside the runway has received a favorable review from NH DHR. Smart Associates will be handling the wetland permits and any requirements to address any work within the jurisdiction of the Shoreland Protection Act.

The runway was constructed 40-50 years ago and the current condition of the pavement is cracked and broken and unsafe. The project is included in the Airport Master Plan Update, and has been identified for reconstruction in the ACIP with the available funding. Construction of the project would not begin until the summer of 2018.

The pavement reduction from 150 feet to 75 feet reduces the impervious area of the runway by 294,700 square feet converting it to grassy shoulder. This grassy shoulder will provide vegetative buffer and treatment because the existing catch basins on the runway pavement will be relocated to the current manhole located just off the pavement. These manholes will be converted to catch basins, minimizing the new construction and enabling the runoff to flow over the grass surface. This improvement in impervious and generally limited disturbance allowed AOT to utilize a General Permitting process.

Other issues, the Ashuelot River (a “Designated River”) is located approximately 2000 feet to the west. The end of Runway 14 and runway safety area occurs within the 100 year floodplain but no

impacts are expected due to the nature of the work. USFWS identified Northern long-eared bats and dwarf wedge mussels as issues and we are coordinating with them on their concerns, however there are no trees associated with the project study area to impact the bats. The team is also coordinating with NHB and has a meeting scheduled today with NH Fish and Game.

Matt Urban asked about the wetland impacts associated with the project. Richard Y showed the wetland field map with the wetland delineation illustrated, pointing out the ditches on either side of Runway 14 and other wetland features. He pointed out there are 4 outfalls on the west side of Runway 2/20. Three of these pipes will be excavated and outlet structures will be repaired on the two culverts on the northern ditch. The fourth outlet near the intersection of Runways 2/20 and 14/32, is not a part of this project. The plan is to clean out the three culverts, removing debris and dredging enough material to allow proper flow. Excavating the culverts will require excavating the ditch to maintain flow.

Matt Urban asked if the ditch is strictly a surface water or any kind of intermittent stream? If just drainage it could qualify as maintenance of existing infrastructure/ditch. Mike Hicks interjected that that would be excluded from ACOE permitting. If it was extending a pipe that would require fill, an ACOE permit would be required. Richard Y. indicated that it was drainage and very flat, holding water in pockets with not much flow. Matt Urban asked if the airport has the original plans for construction of the ditch? No they have looked all over, it was a long time ago. Matt U. asked how old the airport is? Jack Wozmak, the Airport Manager stated that it is 73 years old.

Mike Hicks asked about lighting. Is it in the wetlands? Will it include new lights?
Jack W. noted that basically the existing lighting will be moved to the new edge of pavement.
Richard Y. noted that old wiring may just be left in place to minimize disturbance

Gino Infascelli asked about catch basins and manholes. Can they put in drop inlets? Richard said they basically are drop inlets now. Gino asked if there were sumps in these structures? Richard noted there were not sumps in the catch basins but there were in the manholes. Gino mentioned that Fish and Game would prefer drop inlets for reptiles to get out of versus catch basins which would be a problem. Drop inlets were preferred. Richard described the storm water runoff design

Jim Fougere of Smart Associates brought up the issue of the wetlands/ditches. The team looked at three approaches to address the permitting requirements of excavating the ditch. Gino interjected that they would be looking for a Minimum Impact maintenance permit. That incorporates the concern of dealing with the issue of sorting out where the ditch ends and where the wetland begins. The minimum impact permit addresses the wetland issues.

Erosion controls were discussed briefly.

Mike Hicks noted that the project as described would be exempt under the ACOE.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting